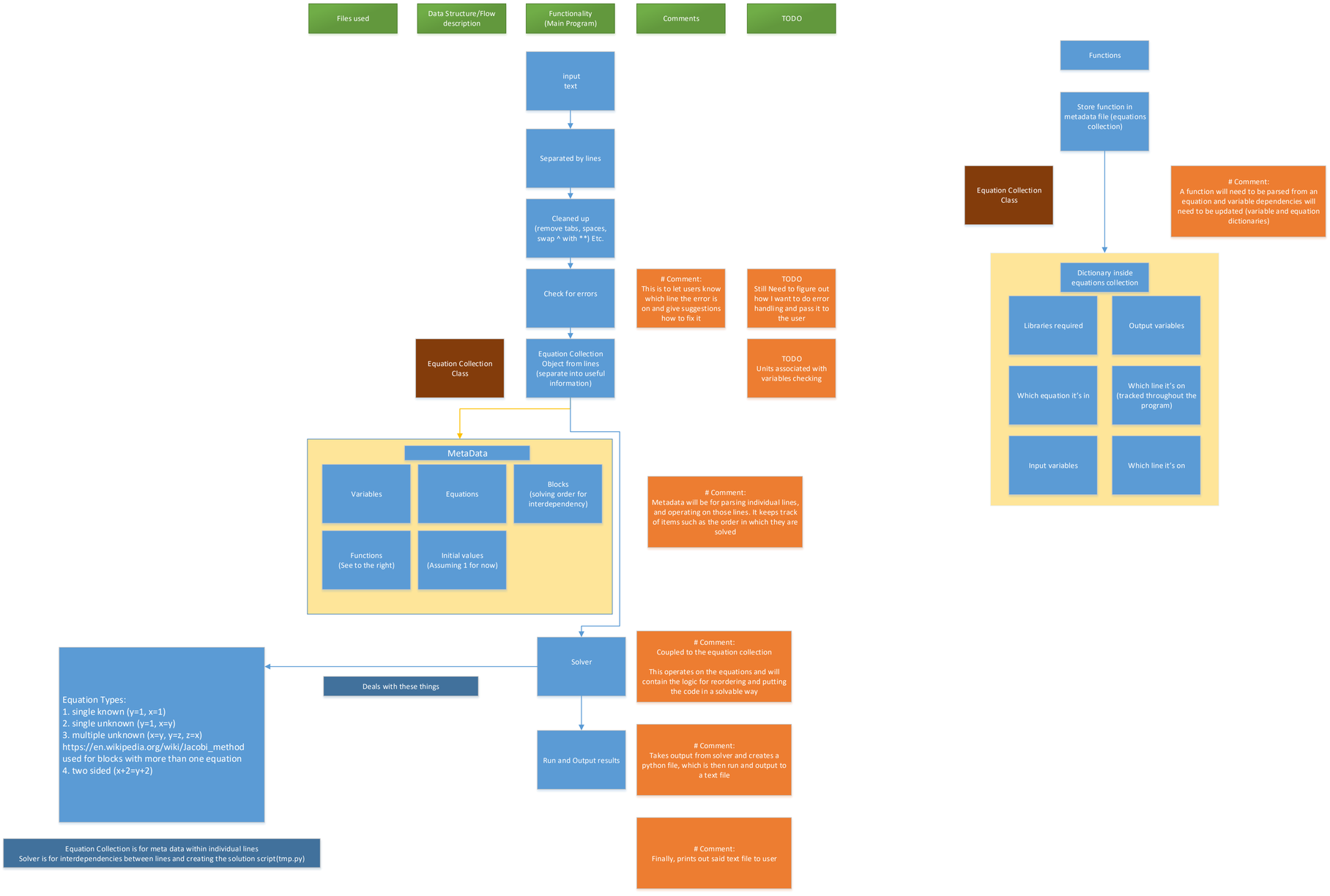
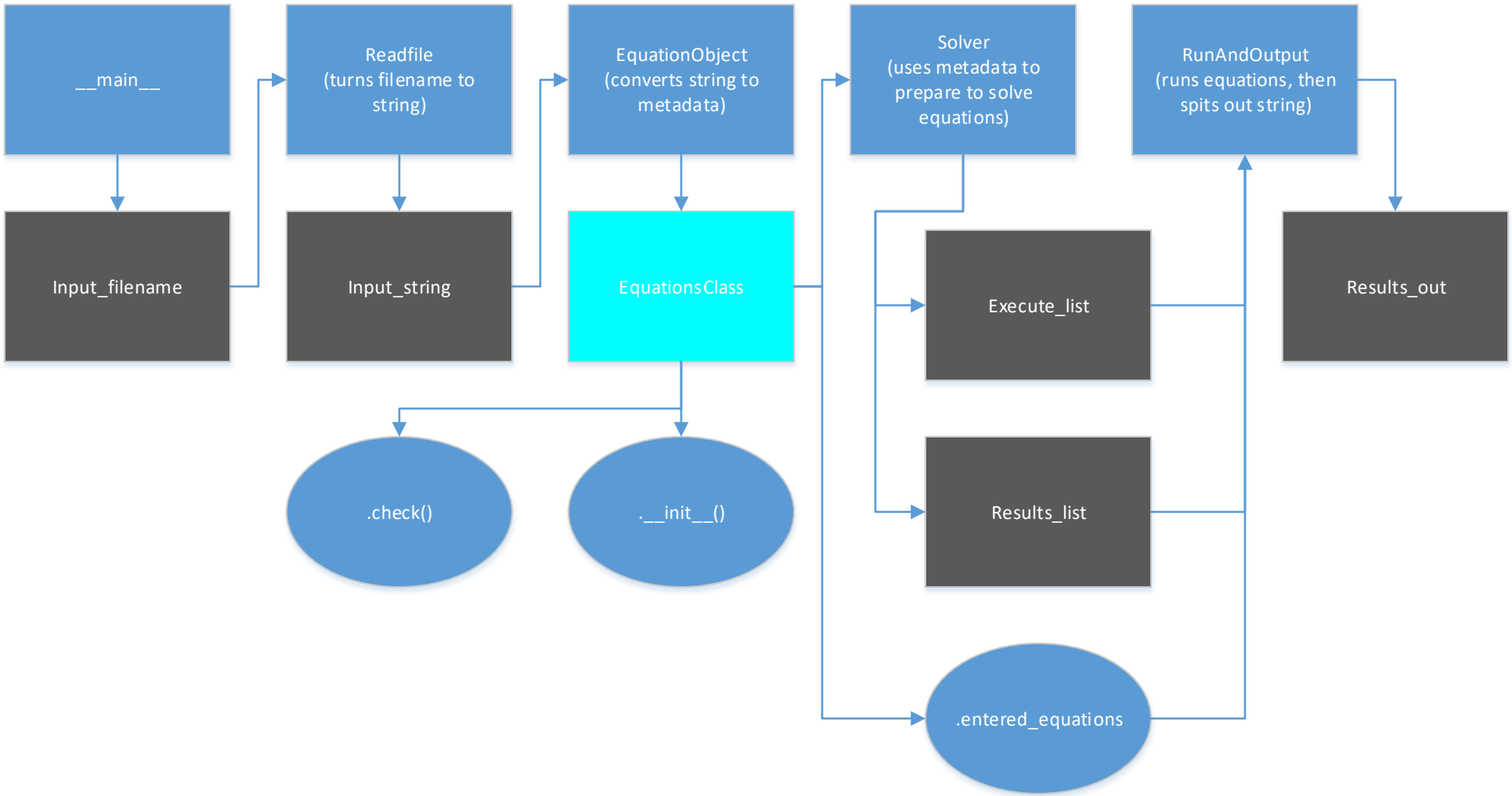
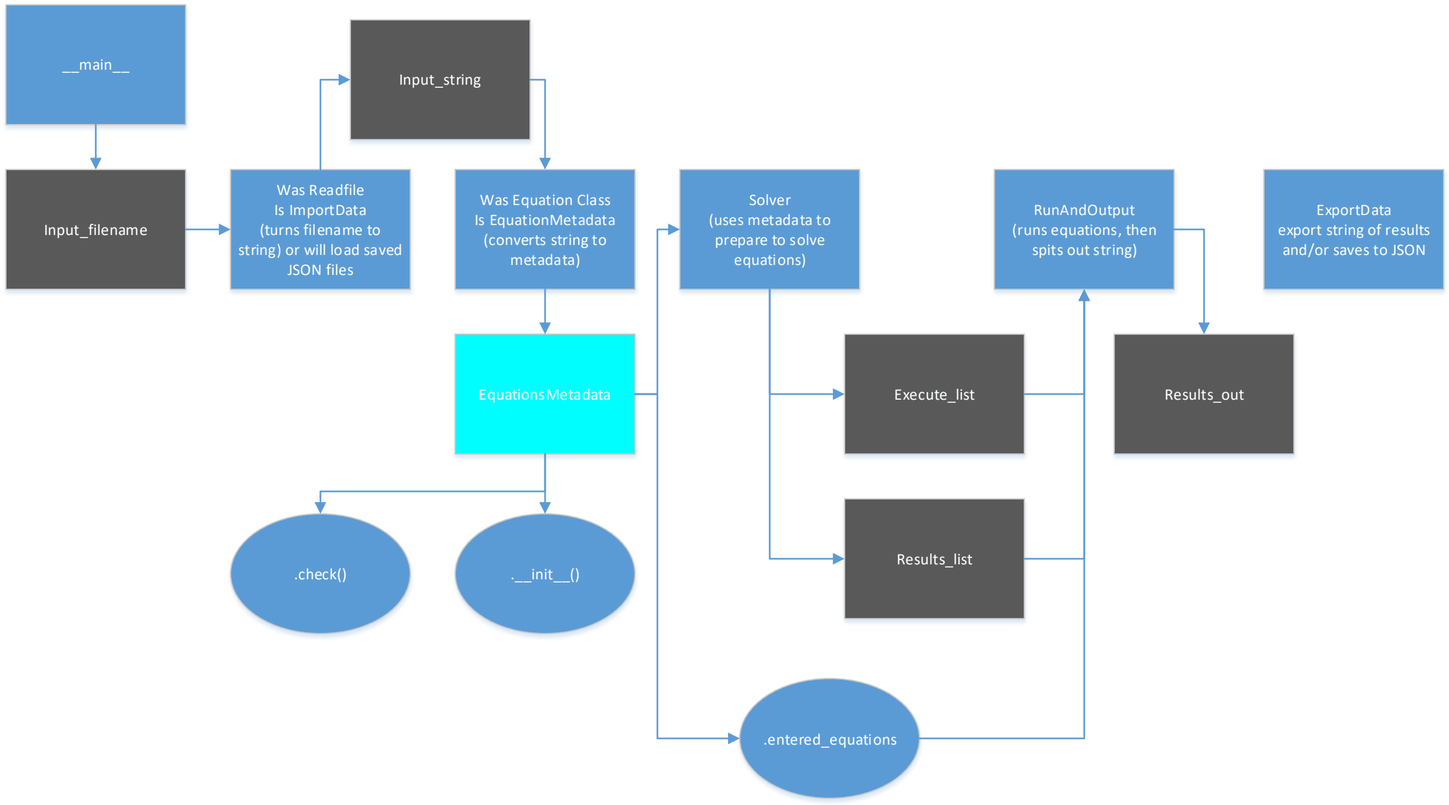

Files used
Data Structure/Flow description
Functionality (Main Program)
Comments
TODO
input text
Separated by lines
Cleaned up (remove tabs, spaces, swap ^ with **) Etc.
Check for errors
Comment: This is to let users know which line the error is on and give suggestions how to fix it
TODO Still Need to figure out how I want to do error handling and pass it to the user
Equation Collection Class
Equation Collection Object from lines (separate into useful information)
TODO Units associated with variables checking
MetaData
Variables
Equations
Blocks (solving order for interdependency)
Functions (See to the right)
Initial values (Assuming 1 for now)
Comment: Metadata will be for parsing individual lines, and operating on those lines. It keeps track of items such as the order in which they are solved
Solver
Comment: Coupled to the equation collection
This operates on the equations and will contain the logic for reordering and putting the code in a solvable way
Deals with these things
Equation Types:
1. single known (y=1, x=1)
2. single unknown (y=1, x=y)
3. multiple unknown (x=y, y=z, z=x)
https://en.wikipedia.org/wiki/Jacobi_method used for blocks with more than one equation
4. two sided (x+2=y+2)
Run and Output results
Comment: Takes output from solver and creates a python file, which is then run and output to a text file
Comment: Finally, prints out said text file to user
Equation Collection is for meta data within individual lines
Solver is for interdependencies between lines and creating the solution script(tmp.py)
Functions
Store function in metadata file (equations collection)
Equation Collection Class
Comment: A function will need to be parsed from an equation and variable dependencies will need to be updated (variable and equation dictionaries)
Dictionary inside equations collection
Libraries required
Output variables
Which equation it's in
Which line it's on (tracked throughout the program)
Input variables
Which line it's on


__main__
Readfile
(turns filename to
string)
EquationObject
(converts string to
metadata)
Solver
(uses metadata to
prepare to solve
equations)
RunAndOutput
(runs equations, then
spits out string)
Input_filename
Input_string
EquationsClass
Execute_list
Results_out
.check()
.__init__()
Results_list
.entered_equations


__main__
Input_string
Input_filename
Was Readfile
Is ImportData
(turns filename to string) or will load saved JSON files
Was Equation Class
Is EquationMetadata
(converts string to metadata)
Solver
(uses metadata to prepare to solve equations)
RunAndOutput
(runs equations, then spits out string)
ExportData
export string of results and/or saves to JSON
EquationsMetadata
Execute_list
Results_out
Results_list
.check()
.__init__()
.entered_equations